CLAIMS

What is claimed is:

1 1.   A method comprising:
2   receiving a database statement that
3   makes a change that causes a loss of data, and
4   contains a clause that specifies an aggregate operation to be performed on
5   a plurality of values associated with the change; and
6   in response to receiving the database statement, performing the aggregate
7   operation on the plurality of values.

1 2.   The method of claim 1, wherein the performing of the aggregate operation is
2   performed while performing the change.

1 3.   The method of claim 1, wherein the loss of data includes values of the data before
2   the change.

1 4.   The method of claim 1, wherein the loss of data includes values of the data after
2   the change.

1 5.   The method of claim 1, wherein the change is an update of the data.

1 6.   The method of claim 1, wherein the change is a deletion of the data.

1 7.   The method of claim 1, where in the receiving is performed by an SQL engine.

1 8.   The method of claim 1, wherein results of the aggregate operation are passed from
2   an SQL engine to a server side stub without passing the data in its entirety.

1 9.   The method of claim 8, wherein results of the aggregate operation are passed from
2   an SQL engine to a client interface without passing the data in its entirety.

1   10.   The method of claim 1, where the database statement is sent from a client

2   interface.

1   11.   The method of claim 1, wherein the database statement contains multiple

2   aggregate operations.

1   12.   The method of claim 11, wherein performing includes:

2   parsing the database statement;

3   establishing a list of operator trees, each operator tree corresponding to a different

4   aggregate function; and

5   establishing an aggregate function list including structures pointing to work

6   spaces for performing the aggregate functions.

1   13.   The method of claim 1, wherein:

2   the receiving of the database statement is performed via a call interface;

3   the performing of the aggregate operation generates an aggregate value; and

4   the method further includes passing the aggregate value through the call interface

5   without passing the plurality of values.

1   14.   A method comprising:

2   receiving a database statement that

3   makes a change that causes a loss of data, and

4   contains a return clause that indicates which values involved in said

5   change are to be changed; and

6   in response to receiving the database statement, performing the change and

7   returning multiple values that were involved in said change.

1   15.   A system comprising computer readable medium carrying instructions for causing

2   a processor to perform a method including at least:

3   receiving a database statement that

4   makes a change that causes a loss of data, and

5   contains a clause that specifies an aggregate operation to be performed on

6   a plurality of values associated with the change; and

7   in response to receiving the database statement, performing the aggregate

8   operation on the plurality of values.

1   16.   The system of claim 15, wherein the performing of the aggregate operation is

2   performed while performing the change.

1   17.   The system of claim 15, wherein the loss of data includes values of the data

2   before the change.

1   18.   The system of claim 15, wherein the loss of data includes values of the data after

2   the change.

1   19.   The system of claim 15, wherein the change is an update of the data.

1   20.   The system of claim 15, wherein the change is a deletion of the data.

1   21.   The system of claim 15 further comprising a computer that accesses the computer

2   readable medium.

1   22.   The method of claim 15, wherein the clause contains multiple aggregate

2   operations.

1   23.   The method of claim 22, wherein performing includes

2   parsing the database statement;

3   establishing a list of operator trees, each operator tree corresponding to a different

4   aggregate function; and

5   establishing an aggregate function list including structures pointing to work

6   spaces for performing the aggregate functions.

1   24.   The system of claim 15, wherein:

2   the receiving of the database statement is performed via a call interface;

3   the performing of the aggregate operation generates an aggregate value; and

4   the method further includes passing the aggregate value through the call interface

5   without passing the plurality of values.

1   25.   A system comprising computer readable carrying instructions for causing a

2   processor to perform a method including at least:

3   receiving a database statement that

4   makes a change that causes a loss of data, and

5   contains a return clause that indicates which values involved in said

6   change are to be changed; and

7   in response to receiving the database statement, performing the change and

8   returning multiple values that were involved in said change.